

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

A₃ 1. (Currently Amended) An exchanger for a tray feeder for transferring and exchanging a tray plate comprising:

first and second support frames;

a guide support unit including a support frame installed between the first and second support frames;

a vacuum generator provided on with a side of the second support frame;

a nozzle support unit mounted on the second support frame and comprising:
including

a pitting unit mounted on the nozzle support unit and operatively coupled to the vacuum generator, wherein the pitting unit is configured for transferring a vacuum force from the vacuum generator to the nozzle support unit, suction force by connecting it to the vacuum generator;

a plurality of vacuum pads operatively coupled to the pitting unit and configured to grasp a pad for performing a grasp of the tray plate with the vacuum suction force transferred from the pitting unit, and

a plurality of stoppers configured to locate a tray plate relative to the nozzle support unit stopper capable of supporting the tray plate;

a head block connected to a side of the nozzle support unit;

a guide block attached ~~installed~~ to a drive ~~second~~ belt and ~~as a state~~ connected to the head block, ~~thereby capable of~~ and configured for guiding the nozzle support unit;

a transfer ~~means~~ device configured for transferring the guide block between first and second positions; and

a driving ~~means~~ driver configured for driving the transfer device means.

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2. (Currently Amended) The exchanger of claim 1, wherein the transfer device means comprises:

a linear motion guide for guiding the guide block;

first and second rollers connected to first and second roller shafts and configured to be rotated by the a drive belt ~~wound~~;

first and second support blocks for supporting the first and second roller shafts~~[[,]]~~; and

~~a plurality of pulleys connected to the first roller shaft for transmitting a the rotation force, and~~

wherein the driver comprises a motor configured for driving the first and second plurality of rollers.

3. (Currently Amended) The exchanger of claim 1, further comprising wherein a sensor capable of sensing ~~a the~~ position of ~~a the~~ tray plate, wherein the sensor is installed to a side of the first support frame.

A3 4. (Currently Amended) The exchanger of claim 1, wherein the nozzle support unit is formed at the lower end portion of the head block and comprises a plurality of nozzles ~~are supported in the nozzle support unit, wherein each vacuum pad of the and a plurality of vacuum pads for sucking one side portion of the tray plate and a plurality of stopper for supporting one side portion of the tray plate are alternatively formed on the~~ are mounted on respective nozzles.

5. (New) An exchanger for a tray feeder, comprising:
a support frame mounted on a tray feeder;
a nozzle support unit mounted on the support frame such that it is movable between first and second positions, wherein the nozzle support unit comprises at least one suction nozzle configured to removably grasp a tray plate using a vacuum force; and
a driver configured to move the nozzle support unit between the first and second positions.

6. (New) The exchanger of claim 5, further comprising at least one stopper mounted on the nozzle support unit and configured to locate a tray plate relative to the nozzle support unit when the tray plate is being grasped by the at least one suction nozzle.

7. (New) The exchanger of claim 6, wherein the at least one suction nozzle comprises a plurality of suction nozzles, and wherein a stopper is located between each adjacent pair of suction nozzles.

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8. (New) The exchanger of claim 7, wherein each suction nozzle includes a flexible vacuum pad configured to abut a tray plate when the tray plate is grasped by the suction nozzle, and wherein the at least one stopper limits movement of the tray plate relative to the nozzle support unit.

9. (New) The exchanger of claim 5, further comprising a vacuum source mounted on the support frame and operatively coupled to the at least one suction nozzle.

10. (New) The exchanger of claim 9, further comprising a pitting unit mounted on the nozzle support unit and operatively coupled to the at least one suction nozzle and to the vacuum source, wherein the pitting unit distributes a vacuum force from the vacuum source to the at least one suction nozzle.

11. (New) The exchanger of claim 5, further comprising a linear motion guide mounted on the support frame, wherein the nozzle support unit is movable along the linear motion guide between the first and second positions.

12. (New) The exchanger of claim 5, further comprising a sensor mounted on the support frame and configured to sense a position of a tray plate relative to the support frame.

A₃ 13. (New) The exchanger of claim 5, wherein the driver comprises:

a motor mounted on the support frame;

first and second drive shafts mounted on the support frame, wherein at least one of the first and second drive shafts is coupled to the motor such that it rotates with the motor;
and

a drive belt mounted on the first and second drive shafts, wherein the nozzle support unit is attached to the drive belt such that movement of the drive belt moves the nozzle support unit between the first and second positions.

14. (New) The exchanger of claim 13, further comprising a linear motion guide mounted on the support frame, wherein the nozzle support unit is mounted on the linear motion guide, and wherein movement of the drive belt causes the nozzle support unit to move along the linear motion guide.

15. (New) The exchanger of claim 13, further comprising at least one stopper mounted on the nozzle support unit and configured to locate a tray plate relative to the nozzle support unit when the tray plate is being grasped by the at least one suction nozzle.

16. (New) The exchanger of claim 15, wherein the at least one suction nozzle comprises a plurality of suction nozzles, and wherein a stopper is located between each adjacent pair of suction nozzles.

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17. (New) The exchanger of claim 16, wherein each suction nozzle includes a flexible vacuum pad configured to abut a tray plate when the tray plate is grasped by the suction nozzle, and wherein the at least one stopper limits movement of the tray plate relative to the nozzle support unit.

18. (New) The exchanger of claim 17, further comprising a sensor mounted on the support frame and configured to sense a position of a tray plate relative to the support frame.

19. (New) The exchanger of claim 18, further comprising a vacuum source mounted on the support frame and operatively coupled to the at least one suction nozzle.

A₃ 20. (New) The exchanger of claim 19, further comprising a pitting unit mounted on the nozzle support unit and operatively coupled to the at least one suction nozzle and the vacuum source, wherein the pitting unit distributes a vacuum force from the vacuum source to the at least one suction nozzle.
